

## Personal Paper

### Measurement of omission

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Back in the 1960s, before rubella immunisation and the Abortion Act, a sixth (unwanted) pregnancy in a 42-year-old Glynccorrwg woman resulted in a child with severe brain damage. The mother had had no apparent illness, but there had been an epidemic of rubella in our village during the first weeks of her pregnancy. The whole family was affected: the father's smoking and alcohol problems went out of control into diabetes and coronary heart disease. As the child grew he became unmanageable; with all ground floor windows smashed and replaced by cardboard, the home became a cave. In the insensitive jargon of health economists he became a high consumer of services, first diagnostically, later for special educational support, now (as his exhausted relatives die or capitulate) for the most costly service of all, full-time residential care.

So when rubella immunisation became possible, we wanted it to succeed. At that time secondary school absence was running at 20% in 13-year-olds at the local comprehensive, and at least this proportion was therefore presumably not immunised. I wrote to our local medical officer of health asking for a list of girls missed, so that we could get them immunised. "I can give you the names of the ones we did," he wrote back, "but how can I know the ones we didn't?"

#### Measuring what we do

Most of medical science is built on measurement of what we do, the patients we see, the diseases we find and treat. The best place to do this is in a hospital, which concentrates patients, diseases, diagnosis, treatment, every type of doing, with minimal contamination by people not yet sick enough to need salvage, whose diseases are doubtful or incompletely developed. Hospitals concentrate the skills required to generate data, the resources to handle them efficiently, and at least pretend a career structure recognising and rewarding disciplined inquiry.

Figure 1 shows the sort of data that hospitals can acquire—the age and sex distribution of pacemaker insertions by the cardiology department at the Radcliffe Infirmary at Oxford.<sup>1</sup> Pacemakers are chiefly used for patients with heart rates too low to perfuse the brain. Without them half die within a year; with them, mortality drops close to the expected rate for age. Most of these patients are old but otherwise healthy. By informed guesswork, Sleight<sup>1</sup> estimates that this may represent an annual demand of about one per 1000 population aged 75 and over. He found a greater demand from the city of Oxford than from the surrounding countryside; was this because of greater need, greater demand, or greater awareness among general prac-

tioners that heart block generally requires pacemakers rather than accelerator drugs?

In South Glamorgan, close to the University of Wales, pacemakers are being inserted at a higher rate than in Oxford, and three times more often than in the rest of Wales. Otherwise healthy and intelligent old people are dying, though effective treatment exists and should be available to all who need it. In Wales, with exceptionally high rates for coronary heart disease,<sup>2</sup> coronary bypass graft operations are performed at a rate of 20 per million population, compared with 250 per

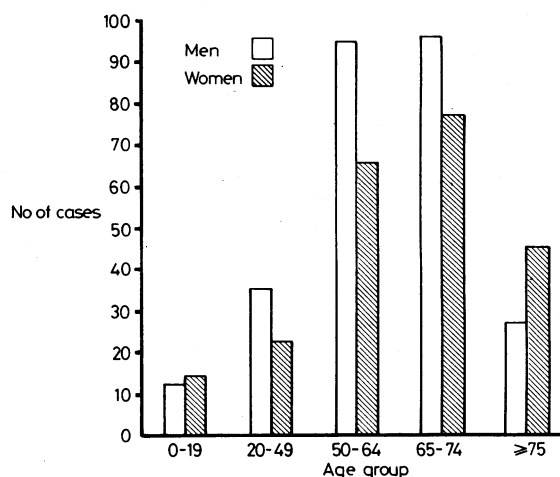


FIG 1—Age and sex distribution of Oxford pacemaker cases 1965-76.

million in the South-east Thames Region and 500 per million in the United States. Epidemiological studies in Sweden suggest that the annual incidence of new cases of coronary disease with good indications for bypass surgery is about 300 per million population.<sup>3</sup> For how many people in Britain, for how many in Wales, is the National Health Service Act no longer operating? How many are simply not getting the benefits of medical science unless they can pay for it? No hospital studies can tell us. They can only measure referred and accepted demand, a complex resultant of patients' symptoms, public expectations, and medical awareness at both general practitioner and consultant level.

#### Measuring what we do not do

Hospital specialists can measure only what they do, not what they do not, because their catchment populations are not defined, and they know almost nothing about people who are not referred to them. General practitioners, on the other hand, are in a position to measure the gap between what is done and

what should and could be done. General practitioners have relatively stable, registered populations, whose names and addresses are known (inner city areas with unstable populations and rapid turnover are a special case requiring special measures). Two-thirds of them consult their doctor at least once in each year, and about 90% consult at least once in five years: so the general practitioner has both a defined population and effective contact with it.

Figure 2<sup>4</sup> shows the sort of data general practitioners can acquire—the proportions of people in 38 practices whose blood pressures had been recorded during the previous five years.

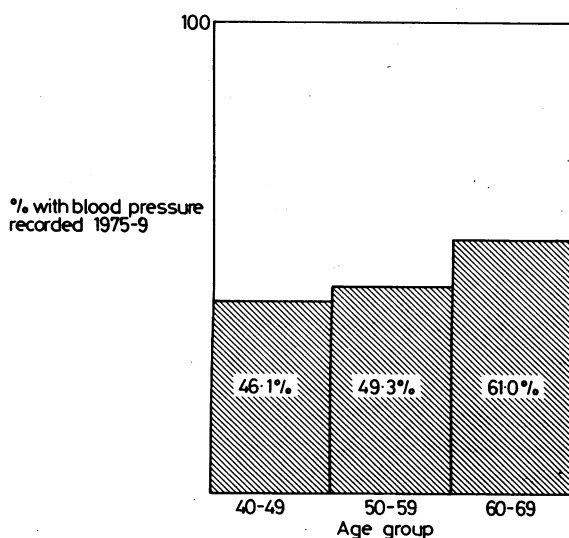


FIG 2—Proportion of men and women with blood pressure recorded in 2687 randomly sampled records from 38 Thames Valley general practitioners.<sup>2</sup>

Unlike fig 1, there is a roof on the histogram; its space is finite. The difference between these types of data and the data recorded in hospitals is that in general practice we can measure what we have not done, what we do not know, the necessary work still incomplete. Even at extremely dangerous levels, high blood pressure rarely causes symptoms: only an active search can give the opportunity for treatment to all who need it. Population surveys have shown that about half those with high blood pressure are not known to their doctors, half of those known are not given treatment, and half of those treated are not adequately controlled. If all those with diastolic pressures sustained over 105 were treated and followed up carefully, the number of strokes could probably be reduced by about 50%.

This is *anticipatory care*, which depends on organising simple things for everyone, as opposed to *salvage*, which generally depends on doing complicated things for relatively few people. Both tasks are essential for an effective public health strategy, but the second depends on the first, because effective and economic specialist salvage rests on accurate referral from generalists. If primary care is inefficient specialists cannot specialise.

### Anticipatory care or prevention?

Prevention is not only better than cure but potentially much cheaper, and that is its real attraction for governments. We have therefore seen two successive administrations theoretically committed to a relative shift of resources from care and cure to prevention, and from hospital specialism to community generalism. In practice, these commitments have remained almost entirely negative; support for hospital cure and care have lagged, without appreciable expansion in community resources.

In an atmosphere of clinical scepticism bordering on nihilism the development of costly hospital specialism has been almost halted within the NHS, leaving technical innovation to token academic departments and the rapidly expanding private market, but making technical salvage, which is now taken for granted in other developed economies, an occasional luxury rather than a normal part of practice. All this might make sense if there were a serious State policy for prevention, but there is not. The budget remains a purely fiscal exercise, in which a principal objective is to ensure that smoking and drinking do not decline to the point where they are no longer profitable sources of taxation. Prevention is seen as a policy of token exhortation, not a positive activity requiring human and material resources: "Look after yourself: we do not have the time or money to treat you so you had better not be ill." As a medical activity prevention means anticipatory care: having enough time and patience to do more than merely respond to immediate demands, extending consultation to include systematic search for opportunities to pre-empt crises and breakdown. With an average of five minutes for each consultation<sup>5</sup> most general practitioners are too busy meeting superficial demand to make any active search for need.

### Do we really want to know?

Use of our general-practitioner system to organise anticipatory care of needs, as well as to meet wants, is at least possible. For American or most West European doctors, this is not so; they are shopkeepers in an open market, and much as they may wish to meet population needs, their only means of doing so is to press indiscriminately for more customers. Though for us rational population management is possible, however, there are immense obstacles in the way of its achievement. The constraints of custom, and public and professional imagination, limit us to satisfaction of wants rather than search for needs. Government fears that it cannot afford for everyone what those with wealth and power assume as natural rights for themselves. Above all, working doctors fear that a system barely able to meet present demand might crumble altogether if they actively sought additional unmet need. Both doctors and governments hide behind the reassuring formula proposed by the doyen of British general practitioner researchers, John Fry,<sup>6</sup> his "insoluble equation of care":

$$\text{wants} > \text{needs} > \text{resources}$$

This is less a law than an apparently self-evident axiom, requiring no proof. It certainly describes how doctors feel after a day in which they may have seen 50 or 60 patients in consultation; and perhaps this is how the DHSS may wish them to feel, since needs are no longer met within the National Health Service.

But is this axiom true? For old people with funny turns, transient giddy spells and blackouts, whose general practitioners do not search for arrhythmias or assume they are untreatable, wants simply do not connect with needs; they cannot enter hospital figures for pacemaker insertion, and exert no pressure on resources. For men in their 40s and 50s with angina, who still do not know the difference between coronary grafts and a heart transplant, whose general practitioners assume that coronary surgery must be exceptional, whose district hospital physicians seem to use subjective criteria for their choice of occasional patients for coronary angiography, wants are uninformed and needs are unascertained. Naturally, bypass surgery is not and never will be an economic strategy for controlling coronary disease; but until we have a seriously organised prevention programme, it is effective for carefully selected patients, and that selection depends on coronary angiography on a very big scale. This is simply not being done. As for the unascertained hypertensive patients in fig 2, they are unaware of their needs, and cannot express them as wants. The resources required are the intelligent organisation of practice staff to measure blood pressure in the two-thirds of any population who consult their

general practitioner in any one year and the 90% who consult over a period of five years, perhaps make home visits on the remaining 10%, and organise follow-up clinics for the patients found.

There is similar evidence for other important conditions, where the potential effectiveness of anticipatory care is not in doubt. Studying a group practice population of over 20 000, Doney<sup>7</sup> found that 52% of known diabetics were having no regular supervision from either general practitioners or hospital specialists, and this included those who were insulin-dependent as much as those with milder, maturity-onset diabetes. Or take control of smoking, which has a greater potential yield than any other single preventive measure. Studies have shown that although about three-quarters of general practitioners claim to initiate discussion of smoking with basically healthy adults who smoke, fewer than two-thirds say that they usually record smoking habits in their clinical notes,<sup>8</sup> and audit of records shows that in fact fewer than one-third of general practitioners who are accredited trainers (and presumably run superior practices) actually do record smoking habits.<sup>4</sup> In a study of 1136 hospital deaths of those aged under 50, the Medical Services Study Group of the Royal College of Physicians<sup>9</sup> found that 24% of 2862 fatal cancers were in the respiratory tract, almost entirely smoking-related, and 80% of the 168 deaths from coronary thrombosis were associated with heavy smoking. Again, until it is too late, wants are fewer than needs; and only at the eleventh hour are very costly resources required. Anticipatory care needs a broad understanding of human biology, time, patience, and friendliness, but not specialised technical skills or very expensive buildings and equipment. Unhurried human contact may be a scarce resource, but to confuse it with necessarily and appropriately scarce high technology and technologists is to propagate a lie.

The truth is that as medical science makes it possible to intervene effectively at earlier, simpler, and more easily reversible stages in the development of disease, diagnosis should become a more active search, less dependent on gross symptoms and therefore less closely associated with wants, at least until ordinary people have higher expectations of health conservation than they have now. Effective anticipatory care requires recognition that wants are neither larger nor smaller, but different from needs. The general practitioner should not only be a symptom-responder, but also an active, informed guide through the risks, possibilities, probabilities, and remaining impossibilities of medical science.

### A new type of doctor

The general practitioner's work is exhausting not only because of its volume but even more because of its apparent futility. Students who will become general practitioners are still almost entirely in the hands of hospital specialists, who can teach the component parts of specialist care excellently, yet fail to put them together into an effective general strategy for care of the community. Nor do students get much help from epidemiologists and community physicians, expert strategists who have generally lost all contact with combat and are therefore unable to teach in the concrete terms of clinical medicine. Until very recently if general practitioners planned their work at all their objective was more often their own survival than the better health of their patients, because they were trained as tacticians but not as local strategists.

What we need is a strategy that maximises the advantage we already have—namely, that primary care populations are listed and identifiable, and general practitioners can therefore plan their work and evaluate its results, evolving a new style of continuous anticipatory care and audit. On this firm base a rational and cost-effective specialist referral service could be built, without limitless demands on scarce resources. In a need-based service, without the inflated demands generated by fee-earning, what evidence is there that people would want

pacemakers, coronary grafts, or renal transplants, which they do not need, or that most would not prefer to take preventive action if they had a primary care service that really helped them to do so?

We are living in times of impending social change on the same scale as the nodal points of 1912 and 1948. Is it not possible that this third time health workers and professionals may accept the necessity of change and play a responsible part in leading it? We know the nature of our work, as no one else can, but we have still to accept the elementary truths that we work in a public, not a private service, and have no future as poor priests for the Establishment. We must give up our illusions of autonomy. Our total independence made sense only so long as our skills were illusory, when the chief contribution of the general practitioner was to maximise placebo effects by cocksure optimism and a collusion of doctor and patient, of profession and society, to avoid objective evaluation of our work because neither could face the reality of our impotence. Now that so much that we do is or could be real and effective (and therefore potentially dangerous), we must relearn the experimental method fundamental to all science: ruthless, quantified, open, and organised criticism of our own work. We cannot do this alone, we have to be answerable to someone; why not to our patients?<sup>10</sup>

### The clinical community physician

Public health has gone down its drains, leaving no one with effective concern for the health of the public. Historically, the separation of curative from preventive medicine has been profoundly damaging to clinicians, but to hygienists it has been disastrous.

Who can maximise the effectiveness of medical science, not above the community but within it; not outside clinical medicine but within its tradition of not only saying but doing? The opportunity and the responsibility lie squarely with general practice. Specialists will continue to develop their valuable and essential work, using high-cost facilities that must inevitably be centralised, not only for economy but, more importantly, to ensure concentration of experience. A prerequisite for efficient use of specialists is the existence of good primary generalists.<sup>11</sup>

Ever since the 1966 package deal, which gave us material resources for good practice independently of our incomes, general practitioners, and in particular their royal college, have been moving beyond the initial phase of broader and deeper personal consultation initiated by Balint<sup>12</sup> towards a population-based conception of continuous care.<sup>4 13 14</sup> Both phases required active search for need, beyond satisfaction of immediate consumer demand. Both required reorientation of traditional attitudes in both general practitioners and their patients, deeper commitment to patient care, and either much smaller lists or an investment in time, staff, records, and building, without which such ideas appear irrelevant and even insulting to general practitioners facing the full impact of the clinical and social pathology of a decaying industrial society.

The 1966 package deal saved British general practice from extinction and allowed real rather than verbal experiments in primary care, important to the whole world. We now need a "1986" package deal, providing structural changes in the NHS necessary for the development of a clinical community physician; public health with a human, personal face, its feet on the ground, its hands still busy with the tasks of anticipatory care. That package should include reduction in average lists to below 2000 in all areas, and below 1700 in industrial areas; expansion of primary care staffs, including health educators and nutritionists working at practice level, with full-time attachment or 100% reimbursement of wages; and quantified self-audit and planned development of community care by general practitioners, substantiated by written annual reports sent to all households registered in the practice, with opportunity for discussion of that report at a public meeting.

It would be unrealistic to imagine that all general practitioners

would wish to work in this way. The responsibilities of the clinical community physician should be a paid option, open to general practitioners who want it. Those who prefer to restrict their scope to answering demand could continue to do so. Pioneering work should be done by volunteers rather than conscripts, but there is no need to assume that volunteers will be exceptional, or that public expectations, once roused, will not rapidly lead to new custom on a much wider scale.

Is such a package politically realistic? Science continues to advance, enlarging the effective potential of medical care. It will not stop because governments have lost interest in public health services and are no longer willing to increase tax support. The gap between what is technically feasible, and what is actually done for the people, will continue to widen. As the public becomes aware of this, and as our profession comes to realise that reversion to private practice is not only unjust but, for all but a small minority, unprofitable, alternatives to the sacrifice of both science and social justice in spendthrift pursuit of the illusions of great power status will become major political issues. Both guns and butter we could perhaps afford, but elaborate weapons systems and advanced medical care for all are evidently no longer compatible. To win priority for life over death, we must do more than defend the health service we have; we must expand our imaginations to claim the Health Service that science now makes possible.

I am grateful to Professor P Sleight and to Messrs Churchill Livingstone for permission to reproduce fig 1.

## References

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*What changes are to be expected in the sexual act after a patient has undergone a transurethral resection of the prostate and at what post-operative stage may sexual intercourse be safely resumed?*

The only change in sexual activity after transurethral resection of prostate and bladder neck is that the ejaculation will be retrograde—in other words, the semen will pass from the ejaculatory ducts into the bladder, as the bladder neck itself can no longer close and occlude its lumen. The semen will then be passed with the urine the next time the patient empties his bladder. This is purely a mechanical effect from the resection, and once the patient has recovered from the debilitating effect of the operation his sexual activity should otherwise be normal for his age. Sexual intercourse should be quite safe four weeks after operation. The only danger to earlier sexual activity is that slough in the bed of the prostate may be dislodged prematurely and cause bleeding. It should, however, be noted that in some patients libido and potency are reduced for a few weeks after any major operation and, in this respect, transurethral resection of the prostate is a major operation. Many men at the age when surgery to the prostate is carried out are already losing some of their sexual activity. The operation of prostatectomy may therefore be used as a scapegoat to explain this diminishing ability.—J P MITCHELL, honorary professor of surgery (urology), Bristol.

*What is the best treatment for pediculosis capitis in children?*

The "best" treatment for pediculosis capitis in children—in the sense that it is effective, cheap, and without complication—is to shave the hair from their scalps. In Britain such advice would be unacceptable, except perhaps for those seeking to be skinheads, but in many tropical countries this is the treatment of choice readily implemented by parents without the benefit of medical advice. Several insecticides kill the louse, but unless they are applied properly and to all those infected in regular contact with the patient cure is not obtained and reinfection will occur. Failure to do this accounts for the continuation of an epidemic in schools and families. The two insecticides most used are gammabenzene hexachloride and malathion. The first is the cheaper and less toxic to the patient, but in some parts of the United Kingdom head lice are said to be resistant to it, and then malathion is the treatment of choice. Both preparations are available as shampoos, which should be left on for about five minutes

before rinsing. They are also dispensed in creams and lotions, which should be left on the hair for 24 hours before washing out. It is advisable to treat the patient a second time a week later to kill any lice that have matured from eggs that were not killed on the first treatment. It is also wise to treat the whole family and even all classmates to scotch an epidemic in a school.—ALAN B SHRANK, dermatologist to the Salop AHA.

*What is the effect of high altitude on blood pressure? Should any special advice be given to patients taking medicines for hypertension who intend to travel by air to destinations between 5000 and 10 000 ft (1500 and 3000 m) above sea level?*

High altitude has little effect on blood pressure, and no special advice is necessary for patients taking medication for hypertension travelling to destinations between 5000 and 10 000 ft (1500 and 3000 m) above sea level. Acute mountain sickness in its cerebral or pulmonary form is rarely a problem below 9000 feet (2700 m). Patients with high blood pressure do not appear to have an increased risk of the disease, and indeed young healthy people are probably more at risk. Individuals intending to travel to altitudes over 10 000 ft should acclimatise slowly. In addition, acetazolamide, 500 mg a day, may be useful in prophylaxis.—PETER F SEMPLE, consultant physician, Glasgow.

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## Correction

### Fatal falciparum malaria and the availability of parenteral antimalarial drugs in hospitals

In this article by M Kapila *et al* (22 May, page 1547) the following concentrations should be: in the third paragraph under "Case Report," white cell count  $14.8 \times 10^9/l$  ( $14\ 800/mm^3$ ); in the first paragraph under "Discussion," parasite concentration  $0.1 \times 10^9/l$  ( $100/mm^3$ ) and  $3.5 \times 10^9/l$  ( $3500/mm^3$ ).